RSPA-97-3100-5

EXEMPTION EVALUATION FORM
(Revised as of April 24, 1996)

PART I APPLICANT

1A. Application Number: 30517

Exemption Number : 11993-N

Project Officer : C.W. Freeman

1B. Date of Application: 10/27/97

1C. Name of Applicant: Michael Vand Bergh
New contact: David Gamlen
Title: Senior Packaging Engineer

Company Name: Breed Technologies, Inc.
Address: P.O. box 33050
Lakeland, FL 33807
Phone Number: (941) 668-6035

1D. U.S. Agent for foreign applicant or Consultant Name: N/A

Company name:
Address:
Phone Number:

1F. Summary of What Applicant is Requesting:
To authorize the manufacture, marking and sale of non-DOT specification cylinders for use as components of automobile vehicle safety systems.

1G. Regulation(s) exempted: 173.301(h), 173.302, 173.306(d) (3)

1H. Modes of Transportation:

1 MV (Y) 2 RF (Y) 3 CV (Y) 4 CGAIR (Y) 5 PSAIR (N)

PART II REVIEW FOR DOCKETING

(X) Application contains sufficient information to support docketing.
( ) Application is incomplete and should be returned for the following reason(s).

PART III HAZARDOUS MATERIALS

3A. Hazardous Materials to be shipped:

Hazardous materials description -- proper shipping name	Hazard Class/ Division	Idenifi-cation Number	Packing Group
Non-toxic, non-liquefied gases and mixtures thereof/ Proper shipping name as specified in 49 CFR 172.101	2.1, or 2.2 as appropriate	As appropriate	N/A

3B. Is the hazardous material capable of being detonated? ~~NO~~

If so, under what conditions?

(1) What special precautions have been taken to prevent these conditions in transportation?

(2) Has the hazardous material been classed as an explosive?
Has it been tested and approved under § 173.56?

Is stabilization required and what type?

3c. Is the hazardous material listed in the Hazardous Materials Table § 172.101? YES

If it is not listed has sufficient information been supplied in order to determine the hazard class?

3D. Other risks presented by the material that warrant special assessment. (ex: flammable or toxic gases produced upon contact with water) NONE

PART IV PACKAGING

4A. Is the applicant seeking an exemption from the packaging requirements? YES (if no - go to Part V)

4B. What type of exemption is the applicant seeking?

___ - Non authorized specification package.
___ - Authorized Specification package with quantity variation.
___ - Over authorized pressure.
__X__ - Non specification package. Most comparable spec. package. DOT-39

4c Is the material of construction appropriate? YES

Will the packaging integrity be sufficient? YES

In the case of a pressurized packaging, will the package adequately contain any pressure that might develop? YES

Have evaluation of tests shown the package to be equivalent? YES

4D What special handling measures needed (specify)? NONE

PART V SPECIAL TRANSPORT AND INFORMATIONAL CONTROLS

5A. Is the applicant seeking an exemption from Special Transport and Informational Controls? NO (if no - go to Part VI.)

5B. Indicate control from which variance is sought. (i.e., placarding requirements, etc.)

PART VI SHIPPING EXPERIENCE

6A. Satisfactory shipping experience:
or
6B. New package with no shipping experience: YES

6C. Explanation if 6A and 6B are both 'Yes' or both 'No':

PART VII DOCKET COMMENTS/INFORMATION

7A. Date checked: 3/24/98

7B. Comments (summarized): NONE

7c. Has CONFIDENTIAL or PROPRIETARY information (49CFR 107.5) been considered in this application? YES

Note: [** All statements made in PART VII which are based on proprietary or confidential material submitted by the applicant must be contained in brackets and preceded and followed by asterisks - e.g. as is this statement. **]

PART VIII OVERALL EVALUATION & RECOMMENDATION

Breed Technologies has requested an exemption in order to manufacture, mark, and sell non-DOT specification aluminum cylinders for use as components of automobile vehicle safety systems. The cylinders are similar to a DOT 39 specification cylinder except for two major items:

1. **The service pressure limit on cylinders constructed from aluminum (500 psig)is exceeded.** Breed requests an exemption for a maximum service pressure of 6,000 psig. Note that the existing design drawings show 5,000 psig service pressure. This cylinder is over designed, however, and the wall stresses are within required limits if it were rated at the higher pressure. Breed also has acceptable burst pressure results for the higher pressure. The request for a 6,000 psig cylinder is to allow for a new design in the near future that would be identical to the existing cylinder except that the wall thickness would increase slightly to guarantee consistent minimum burst pressure results. For-all-designs, the required ratios of service, test, and burst pressures will be maintained*; and

2. **The proof pressure test procedure is altered. Breed requests that the requirement for a** 30 **second hold at test pressure be waived.** [** As a quality control measure, Breed Technologies' proof pressure tests each cylinder to 26% higher than required by §178.65. In addition, ultrasonic resonant spectroscopy is performed on each vessel to detect flaws in the parent metal or welded joints **]

Breed has submitted burst test results and wall stress calculations that support the application and demonstrate an equivalent level of safety. Breed Technologies' application is not precedent setting; OEA Automotive Safety Products DOT-E 11506 and Autoliv ASP, Inc. DOT-E 11777 are almost identical. It is recommended that this exemption be granted. AK. See DOT-E 11579 (TEW)

Office of Hazardous Materials Technology (OHMT)

Office DHM-21 (22) 23

Project Officer C.W.Freeman CWF Date 3/24/98

Team Leader ___ Date _____

Office Director for CHH Jim O'Steen Date 3/25/98

Pre-decisional Document until signed by DHM-20 Director
- Not subject to FOIA while pre-decisional

* Based on 3/24/98 telephone conversation with Brian Matzl and David Gramlen of Breed.

CONFIDENTIAL

BREED TECHNOLOGIES, INC.

HYBRID SIDE IMPACT INFLATOR -

Pressure Vessel Factor of Safety:

Minimum Vessel Burst Pressure = 14,200 psi

Hot Working Pressure= **6,800 psi** **(5000 psi fill)**
(storage pressure at 185°F)

Factor of Safety = **2.09**

3/24/98 Telcon w/ Brian Matzl + David Gamlen

5,000 psig design serv. press
press. of contents at 200°F = 7041 psig = TP
(currently proof test to 7900 psig)
max serv press = 7041 (0.8) = 5,633
min burst = 7041 x 2 = 14,082

6,000 psig design serv press
press. of contents at 200°F = 8459 psig = TP
(would proof to 9480 psig - company policy)
max sp = 8459 (0.8) = 6767
min burst = 8459 x 2 = 16,918